

Appl. No. 10/736,501

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REMARKS/ARGUMENTS**Claim Amendments**

Claim 5 has been amended into independent form and recites limitations from claim 2 as previously amended. Claims 2 to 4 have been cancelled. Claims 6, 7, 11, 15, 18 to 20, and 22 have been amended so as to depend upon claim 5. Claims 6 and 7 have been further amended as appropriate in view of their new dependencies. Claim 8 has been amended into independent form including all limitations from base claim 2 and intervening claim 6.

Claim 26 has been amended so as to recite subject matter defined by original claim 5.

Applicant submits that the claim amendments are fully supported by the application as originally filed and that no new subject matter has been introduced.

Claim Rejections – 35 USC 103

The Examiner rejects claims 2, 3, 5-7, 11, 13-15, 17-22, 24, 26 and 28-31 under 35 USC 103(a) as being unpatentable over United States patent No. 6,895,258 ("Scherzer") in view of United States patent application publication No. 2004/0121810 ("Goransson"). The Examiner's rejection of claims 2 and 3 is rendered moot, as claims 2 and 3 have been cancelled. Applicant submits that claims 5-7, 11, 13-15, 17-22, 24, 26 and 28-31 are patentable over Scherzer and Goransson for reasons detailed below.

Applicant notes that in the previous correspondence dated January 12, 2006 it was submitted that Scherzer is concerned with determining an appropriate beam width which results in negligible intra-cell interference and that this is completely different from imposing a minimum angle of separation constraint as in the present application. However, as outlined on page 2 of the Detailed Action, the Examiner has rejected such arguments. The Examiner refers to the abstract and column 6, line 65 through column 7, line 5 of Scherzer for disclosure that subscriber stations are serviced simultaneously based on their spatial status. The Examiner states that "positioning of the subscriber stations are achieved through detection of angle of arrival (col. 7, lines 44-65), which suggests an angle of separation constraint being imposed on the

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subscriber stations [emphasis added]”. Applicant respectfully disagrees with the Examiner’s conclusion, as there is no suggestion that an angle separation constraint is being imposed in Scherzer.

Scherzer teaches in column 6, line 65 through column 7, line 5 that “service may be scheduled based on channel loss conditions and/or based on spatial conditions [emphasis added]”. Scherzer also teaches that “if a subscriber system is relatively isolated in angle [emphasis added], it may be more frequently serviced, thereby increasing system throughput”. Applicant appreciates that Scherzer is concerned with “spatial conditions” and subscriber systems that are “relatively isolated in angle”. However, this does not teach or suggest a minimum angle of separation constraint as defined by the present application. Instead, Scherzer suggests that being “relatively isolated in angle” is accomplished by determining appropriate beam widths. To this effect, the “spatial conditions” in Scherzer are addressed by appropriate selection of beam widths. By contrast, the present application aims to achieve at least a certain angle of separation by imposing a minimum angle of separation constraint.

On page 2 of the Detailed Action, the Examiner goes on to state that “servicing of multiple subscriber stations requires that the beam width (measured in degrees) be of at least a minimum angle of separation in order to service the subscriber stations simultaneously”. It is respectfully submitted that the Examiner has confused the concepts of beam widths and angle of separation. A beam width is not an angle of separation, as they are different concepts altogether.

The Examiner goes on to state that “it is well known in the art of beam forming and SDMA systems that a minimum angle of separation between subscribers is necessary in order to avoid errors from interference”. However, the Examiner has not provided any prior art document or other evidence that demonstrate this to be the case. Notwithstanding this, Applicant respectfully disagrees with the Examiner. Applicant’s approach is to impose a minimum angle of separation constraint. However, with reference to Scherzer, it is evident that there are other approaches. As noted above, Scherzer is concerned with determining appropriate beam widths, which is different from imposing a minimum angle of separation constraint. Therefore, it is respectfully submitted that the Examiner’s contention that a minimum angle of separation between subscribers is *necessary* is not well founded.

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In view of the foregoing, Applicant submits that imposing a minimum angle of separation constraint is not taught or suggested by the disclosure of Scherzer. To emphasise this distinction, Applicant directs the Examiner to the present application on page 10. The present application teaches that by imposing a minimum angle of separation constraint, the amount of interference between pairs and receivers will be lower, and as a result overall throughput will be improved. Therefore, Applicant submits that there is a benefit in imposing a minimum angle of separation constraint.

Turning now to Goransson, it is re-submitted from Applicant's previous correspondence dated January 12, 2006 that Goransson is also silent to imposing a minimum angle of separation constraint. Since the Examiner has not contested this point, no further explanation is provided here.

In view of the foregoing, neither Scherzer nor Goransson teach the minimum angle of separation constraint of the present application. Since each of claims 5-7, 11, 13-15, 17-22, 24, 26 and 28-31 include the minimum angle of separation constraint, Applicant submits that these claims are patentable over Scherzer and Goransson on this basis alone.

Regarding claim 5, the Examiner contends that Scherzer teaches "determining a receiver of remaining receivers which has a largest angle of separation [emphasis added] with previously scheduled receivers and scheduling that receiver subject to the constraint". Applicant respectfully disagrees. The Examiner looks to column 6, line 65 through column 8, line 15 of Scherzer. However, this portion of Scherzer teaches "determining beam width [emphasis added] which may be used with respect to a subscriber system such that intra-cell interference will be reduced to a negligible level". As noted above, Scherzer is concerned with determining an appropriate beam width which results in negligible intra-cell interference. Applicant submits that this is completely different from scheduling receivers based on a largest angle of separation with previously scheduled receivers as defined in claim 5. The Examiner also looks column 18, line 23 through column 19, line 50 of Scherzer. This portion of Scherzer teaches many things, but is silent to teaching scheduling receivers based on a largest angle of separation with previously scheduled receivers as defined in claim 5.

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Since each of claims 5-7, 11, 13-15, 17-22, 24, 26 and 28-31 include a minimum angle of separation constraint and further include the feature of scheduling based on a largest angle of separation, Applicant submits that these claims are all patentable over Scherzer and Goransson. The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 5-7, 11, 13-15, 17-22, 24, 26 and 28-31 under 35 USC 103(a).

The Examiner has rejected claims 4, 12, 23, and 27 in view of additional prior art. The rejection of claim 4 is rendered moot, as claim 4 has been cancelled. The Examiner's rejection of claims 12, 23, and 27 relies on Scherzer and Goransson as disclosure for their base claims. However, since Scherzer and Goransson do not teach the base claims alone or in combination, the Examiner's rejection of claims 12, 23, and 27 is not well founded. The Examiner is respectfully requested to reconsider and withdraw the rejection of claims 12, 23, and 27.

Allowable Subject Matter

The Examiner objects to claims 8-10, and 16 as being dependent upon a rejected base claim, but indicates that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 8 as amended is in independent form and includes all limitations from base claim 2 and intervening claim 6. Claims 9, 10, and 16 depend on claim 16. Accordingly, claims 8-10, and 16 no longer depend upon a rejected claim and are therefore allowable.


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In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

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